terminal for use in receiving digital broadband data via a broadband channel on a communication network. The digital broadband data may be presented to a user, for example, as a real time video program and/or an animated interactive video program.

Prior art terminal device functionality was limited to program selection, decoding and display. Since competing video information providers may desire to offer enhanced video services to users, a need exists to provide terminal devices that support enhanced functionality without requiring a user to purchase different terminals to accommodate the enhanced video services. There is also a need for set top terminal devices that may be dynamically programmed to accommodate the video services of a service provider selected by a user from a plurality of available service providers. Finally, since different service providers may sell or lease different set top terminal devices to customers, there is a need for an arrangement that limits the modification of operating system software resident in the terminals to authorized information providers responsible for maintaining the user's set top devices.

The present invention provides an arrangement for dynamically programming the digital entertainment terminal to provide a wide range of broadband digital video services from a plurality of available video service providers, while at the same time protecting the digital entertainment terminals from unauthorized loading of operating systems by competing service video service

9

providers. One aspect of the present invention provides a digital entertainment terminal that selectively downloads software executable by a processor within the digital entertainment terminal from a selected one of the information service providers. For example, independent claims 1 and 7 recite that software is received via a broadband, digital link "from a selected one of the service providers." As recited in claim 1, selection is made by outputting selection signals from the terminal to a two-way control signaling channel in response to user inputs. Claim 7 also recites that at least two service providers provide software and digitized audio and video information. Hence, the digital entertainment terminal can be dynamically programmed to accommodate any broadband video services provided by different video information providers. Execution of the software thus supports the presentation of the broadband video services to the terminal user.

Another aspect of the present invention, recited in claims 14 and 32, is the downloading of <u>application software</u> for execution by the terminal. The "application software" is received over the communication network and stored in a system memory in the digital entertainment terminal. As described on pages 9-10 of the specification, the application program may provide the user a specific interactive service offered by the information service provider. Application programs can take almost infinite variety of forms to facilitate different services, enabling each information

10

service provider may custom tailor special application programs to provide enhanced video services unique to that information service provider.

Still another aspect of the present invention ensures that a digital entertainment terminal is not damaged by competing information service providers attempting to download incompatible operating systems software. Claims 24 and 28 each recite the step of "determining if the one information service provider is authorized to download operating system software." Hence, while a terminal may be able to download application software from any service provider under the selection by a terminal user, only authorized service providers are permitted to download operating system software into a user's terminal. Hence, concerns of corrupted software affecting terminal devices are minimized. These and other features of the claimed invention are neither disclosed nor suggested in the cited prior art.

Litteral et al. discloses an enhanced public switched telephone network, where a subscriber requests transmission of video data using a *telephone* by dialing through a voice telephone switch to a voice response unit (VRU) of a video gateway device and dialing in selection information, for example to receive pay per view services. Alternatively, the user can access the video gateway device and select a video using a remote control device, a set top terminal and the control signalling channel through the

network (col. 10, lines 46-68).

As admitted in the Official Action, Litteral et al. neither discloses nor suggests the downloading of any software, or providing any specialized software necessary to control interactions between the user and the selected service provider. Thus, Litteral et al. does not contemplate the need for dynamically programmable terminal devices to accommodate a variety of video and interactive services offered by a large number of information providers. Further, there is no legitimate showing in the record of the motivation to modify Litteral et al. in order to obtain the claimed invention as a whole. Hence, Litteral et al. provides no disclosure or suggestion whatsoever to download any type of software to a terminal.

Palazzi, III et al. discloses a low data rate terminal that uses a television receiver as the display, instead of a computer monitor, to provide a low-cost terminal for accessing commercial databases, such as Prodigy. According to Palazzi, III et al., the potential end-user of the host database system may have need or desire to purchase a personal computer other than for accessing the database system (col. 2, lines 32-39), and thus, the purchase price of most computers may be a deterrent for the average consumer who might consider subscribing to a commercial database system. Thus, Palazzi, III et al. is limited to providing a low-cost apparatus for accessing commercial database systems, such as

Prodigy® travel information, news retrieval or stock quotation indices.

Palazzi, III et al. discloses simply a terminal that connects to a database via a low data rate (1200 baud) modem 4. There is absolutely no interaction between any downloaded software and video information, let alone broadband digital video information. Note that the video switch 9 bypasses the cable/antenna 11 of the television receiver 15 during access to the database. Nothing sent or received by the 1200 baud modem via the telephone line 1 can be considered video data, let alone broadband video data, since such a data rate is insufficient to provide video services.

Hence, Palazzi, III et al. is non-analogous art because this reference is not within the field of the inventors' endeavor, namely providing broadband video services to a plurality of subscribers. Further, this reference is not reasonably pertinent to the particular problem with which the inventors were involved, namely providing set top terminal devices which process compressed, broadband digital video audio information and that are readily adaptable to facilitate a range of broadband audio/video and interactive services offered by a large number of information providers. Hence, Palazzi et al. does not satisfy the legal definition of analogous art in *In re Wood*, 202 USPQ 171, 174 (CCPA 1979).

The assertion on page 18 of the Official Action that "nothing in Palazzi prohibits the use of such technology [to reprogram a terminal by the host operator] to be used on digital video data on a broadband channel" is legally improper. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992) (emphasis added).

Palazzi, III et al. is nothing more than a low data rate terminal that uses a television receiver instead of a computer monitor as the display. The low cost terminal is used to access commercial databases, such as Prodigy. There is absolutely no interaction between any downloaded software and video information, let alone broadband digital video information. Rather, video switch 9 bypasses the cable/antenna 11 of the television receiver 15 during access to the database. Palazzi et al. neither discloses nor suggests that the digital entertainment terminal may download software from a selected one of a plurality of service providers, as recited in independent claims 1 and 7. Further, Palazzi, III et al. neither discloses nor suggests the downloading of *application software*, as recited in claims 5, 8, 14 and 32; rather, the host database operator can do no more than reprogram "internal program operation, communication tables and techniques, resident information, character generation fonts, figures or dots." (Col. 9,

lines 48).

Finally, Palazzi et al. neither discloses nor suggests the claimed feature of "determining if the one information service provider is authorized to download operating system software." In fact, Palazzi teaches away from the present invention by enabling a host operator to modify internal operations, without any disclosed means for limiting unauthorized operator access.

Nevertheless, the hypothetical combination of Litteral et al. and Palazzi neither discloses nor suggests the claimed features of downloading software from a *selected* information service provider (claims 1, 7), downloading *application* software (claims 5, 8, 14, 32), or determining if the information provider is *authorized* to download operating system software (claim 24).

Bacon et al. discloses a reprogrammable subscriber terminal for a cable television system (CATV) that executes a boot program upon startup and reset, to determine whether the control program should be changed from a command sent from the headend. Specifically, the headend 10 "will be constantly broadcasting a standard software program that all subscriber terminals should be using." Hence, Bacon et al. neither discloses nor suggests downloading software from a *user-selected* service provider (claims 1, 7), the downloading of *application software* (claims 5, 8, 14, 32), or determining if a selected information provider is authorized to download operating system software (claim 24). Rather, Bacon et al. teaches the use of a single headend 10 to download software that must be used by *all* terminals.

15

Further, the hypothetical combination of Litteral et al., Palazzi, and Bacon et al. neither discloses nor suggests the claimed features. The hypothetical combination does not contemplate how an individual or a plurality of information providers would download software. In fact, the teachings of Litteral et al. and Bacon are inconsistent, since Litteral et al. uses a digital crossconnect system (DCS) to supply video data from either video information provider 142 or video information provider 162 to a user. However, Bacon et al. requires that the headend constantly broadcasts the standard software that all subscriber terminals should be using. Having such a dominating system that requires all subscriber terminals to use the same software is completely contrary to the objectives of the multiple-provider video on demand system disclosed in Litteral. Moreover, the hypothetical combination would be inoperative because there is no way suggested to control the downloading of software in the Litteral/Palazzi/Bacon network.

Thus, the hypothetical combination neither discloses nor suggests the downloading of software from a user selected information service provider, downloading application software from a service provider, or determining if a service provider is authorized to download operating system software, as recited in the independent claims. For these and other reasons, claims 1, 7, 14, 24, and 32 are patentable over Litteral, Palazzi and Bacon.

16

The rejection of claim 28 in view of Litteral and Bacon is respectfully traversed. As described above, the hypothetical combination of Litteral and Bacon neither discloses nor suggests "determining if the one information service provider [from a plurality of service providers] is authorized to download operating system software." Rather, Bacon teaches the use of only one headend that constantly broadcasts the same software for use by all terminals.

The present invention, however, contemplates that competing service providers will provide different digital entertainment terminals. Hence, since different digital entertainment terminals will require different operating system software, the present invention ensures that a given digital entertainment terminal receives operating system software only from the corresponding authorized information service provider.

Hence, the argument on page 8 of the Official Action regarding claims 24 and 25 is improper because the issue is not access by unauthorized *users*, but rather access to the users' terminals by unauthorized *service providers*.

For these and other reasons, claim 28 is patentably distinguishable over Litteral in view of Bacon.
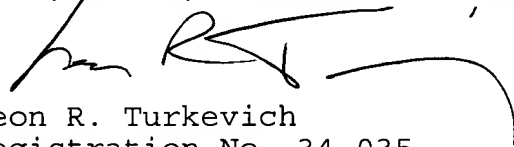
In view of the above, it is believed this application is in condition for allowance, and such a Notice is respectfully solicited.

Serial No. 08/250,791

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 12-2237 and please credit any excess fees to such deposit account.

Respectfully submitted,

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